GENERAL NOTES

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PREDATION OF FIVE SPECIES OF NOCTUIDAE AT ULTRAVIOLET LIGHT BY THE WESTERN YELLOWJACKET (HYMENOPTERA: VESPIDAE)

Additional key words: *Nephelodes minians, Pseudaletia unipuncta, Heliothis zea, Trichoplusia ni, Catocala faustina.*

Between 23 September and 26 October 1989, I observed several western yellowjackets, *Vespula pensylvanica* (Saussure), preying on five species of Noctuidae at an ultraviolet light in central Colorado.

Vespula pensylvanica ranges from Hawaii, east across the Rockies onto the high plains of central Colorado (Akre, R. D., A. Greene, J. F. MacDonald, P. J. Landolt & H. G. Davis. 1980, Yellowjackets of America north of Mexico, U.S. Dept. Agric. Handbook No. 552, pp. 69–71). This predation was observed in Greenwood Village, a suburban area southeast of Denver, in Arapahoe County. Wasps began arriving at the ultraviolet light about 15 min before sunrise and returned continually until later afternoon, searching for moths. The wasps patrolled even on days when the ultraviolet light was not used the previous night. Although only one wasp was observed at a time, it is likely that more than one individual was involved in the attacks.

Moths attacked by *Vespula pensylvanica* were resting either on the white sheet behind the ultraviolet light, or on the house wall adjacent to the sheet. The wasp attacked by stinging a moth once in the abdomen. Some moths jumped and flew away, but others fell to the ground, flapping their wings. The wasp then followed the moth to the ground and stung it several more times. After the moth stopped moving, the wasp bit the moth's wings off at the base, and ate the body. Usually (n = 5), the abdomen and most of the thorax was eaten by the wasp, leaving only the tougher parts of the thorax and head. In one case, the wasp flew off with the prey.

The five species observed to be victimized by *V. pensylvanica* were: *Nephelodes minians* Guenee., *Pseudaletia unipuncta* (Haworth), *Heliothis zea* (Boddie), *Trichoplusia ni* (Hübner)(identified in Covell, C. V., 1984, A field guide to the moths of eastern North America, Houghton Mifflin, Boston, pls. 22, 29, 31), and *Catocala faustina* Strecker (identified in Holland, W. J., 1968, The moth book, Dover, Toronto, pl. 33). The successful attack on the *Catocala* species was surprising because *C. faustina* is much larger than the wasp. Other moths present but not attacked included several larger *Catocala* species and one unidentified, blackish Noctuidae.

Two other published observations of vespid wasps preying on adult Lepidoptera were recorded by S. H. Scudder (1889, The butterflies of the eastern United States and Canada, with special reference to New England, published by the author, Cambridge, MA), who observed a *Liminitis arthemis* (Drury) in the clutches of a large vespid wasp that had seized its prey as it sunned on a road (p. 1612). Scudder (p. 1217) also recounted an earlier observation made in England by G. Newport (1863, Trans. Entomol. Soc. Lond. 1:228–230), who reported a successful attack by *Vespa vulgaris* on *Pieris rapae*. Although this is not the first published observation of a vespid wasp preying on adult Lepidoptera, it is the first observation of a vespid preying on moths that have been attracted to UV lights (Frank, K. D., 1988, J. Lepid. Soc. 42:63–93). (For further observations of invertebrate predation of Lepidoptera, see Nielsen, M. C., 1977, The Great Lakes Entomol. 10:113–118.)

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